

# 50PS80 TV INTERCONNECT DIAGRAM

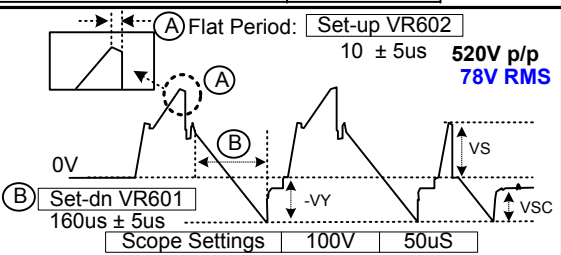
NOTE: Diode tests are conducted with the PWB disconnected.

Note: If AC Det (Pin 18) is missing, the set will not come on  
Note: The 17V supply will pulsate 2 to 3 times a second with Vs unloaded.

| Y-SUS LOCATION                          | Generic Part |
|---|--------------|
| D51, 52, 61, 62, 71, 72                 | MA3DF30      |
| Q51, 52, 61, 62, 71, 72, 73, 81, 82, 83 | 45F122       |
| Q98, 99                                 | K3667        |
| Q93, 94, 95, 96, 97                     | IRFI14229    |

| P302 | Pin | Diode Check | Pin  | Diode Check |
|------|-----|-------------|------|-------------|
|      | 1,2 | Open        | 6,7  | Open        |
|      | 3   | NC          | 8    | NC          |
|      | 4,5 | Gnd         | 9,10 | 0.86V       |

| Z-SUS LOCATION                          | Generic Part |
|---|--------------|
| D16, 17                                 | RF2001       |
| Q10, 11, 12, 20, 21, 22, 30, 31, 40, 41 | 45F122       |
| D30, 31, 40, 41                         | MA3DF30      |
| Q13, 14                                 | 20NF20       |
| Q15                                     | 51N25        |



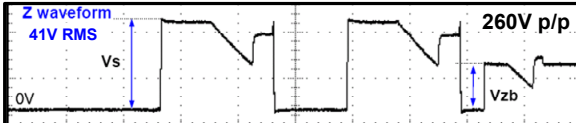
| P811 / P812 "SMPS" |       |      |      |             |
|--------------------|-------|------|------|-------------|
| Pin                | Label | STBY | Run  | Diode Check |
| 1,2                | VS    | 0V   | 195V | Open        |
| 3                  | NC    | NC   | NC   | NC          |
| 4,5                | Gnd   | Gnd  | Gnd  | Gnd         |
| 6,7                | VA    | 0V   | 65V  | Open        |
| 8                  | NC    | NC   | NC   | NC          |
| 9,10               | M5V   | 0V   | 5.0V | 0.86V       |

| P813 "SMPS" - P200 "CONTROL" |       |      |     |             |
|------------------------------|-------|------|-----|-------------|
| Pin                          | Label | STBY | Run | Diode Check |
| 1,2,3,4                      | 5V    | 0V   | 5V  | 0.75V       |
| 5,6,7,8                      | Gnd   | Gnd  | Gnd | Gnd         |

| P814 "SMPS" - P1108 "MAIN" |          |      |      |             |
|----------------------------|----------|------|------|-------------|
| Pin                        | Label    | STBY | Run  | Diode Check |
| 1,2                        | 17V      | 0V   | 17V  | 2.2V        |
| 3,4                        | Gnd      | Gnd  | Gnd  | Gnd         |
| 5,6                        | 12V      | 0V   | 12V  | Open        |
| 7,8                        | Gnd      | Gnd  | Gnd  | Gnd         |
| 9,10,12                    | 5V       | 0.5V | 5V   | 1.2V        |
| 11                         | 5V STBY  | 5V   | 5V   | Open        |
| 13,14,15                   | Gnd      | Gnd  | Gnd  | Gnd         |
| 16                         | NC       | NC   | NC   | NC          |
| 17                         | 5V DET   | 0V   | 4.7V | 1.45V       |
| 18                         | A/C DET  | 5V   | 5V   | 1.45V       |
| 19                         | RL ON    | 0V   | 3.3V | Open        |
| 20                         | VS ON    | 0V   | 3.2V | Open        |
| 21                         | M5V ON   | 0V   | 3.3V | Open        |
| 22                         | AUTO GND | 0V   | 0V   | Open        |
| 23                         | STBY 5   | 5V   | 5.0V | Open        |
| *24                        | KEY ON   | *0V  | *0V  | Open        |

\*If pin 24 is at 4.3V the Power Button is off.  
This will prevent the unit from coming on. (STBY 5V is turned off).

TIP: If A/C DET is low or missing, Remove AC Det (pin 28) out of P814 and jump it to any pin carrying 5V STBY. Then reapply power to the unit. If the Set now works normally, the SMPS is defective.



TIP: To Test Z-SUS  
Without a good Y-SUS.  
1) Light bulb load Vs.  
2) Jump the 17V from pin 1 or pin 2 P814 to the Z-SUS connector P100 1~5.

SMPS TEST: Removing connector P814 will force the SMPS into full run mode. Only do this with AC power removed then reapply AC power.

Complete testing of the SMPS requires that you load VS with 2 100 watt light bulbs with P811 and P812 unplugged to verify it is functioning correctly.

D6 blink pattern shows temperature Pins 1~4 (5V)

Pins 9~12 17.8V

Pins 1~6 are 17.8V from Y-Sus

D7 shows PWB running OK

17.8V Source

AUTO GEN is activated by shorting pin 1 to pin 2 of connector P6 ONLY with LVDS cable removed.

\*FL4 / FL5: These EMI filters have 4 solder tack points the center two are tied to ground.

Floating Gnd D904 Across +Vy-Vsc 163V 180V

LOC Developes Cathode

LOC Source Gate Drain

\*Generic parts list for sub supplies located in and above Y-SUS.

Front PWB IR Receiver Power Button

Side (Key) Controls

X-Board Center

X-Board Right

P307 Y-SUS

P121

P110 3.3V in on Pins 57~60

P120 Va out on Pins 1~12

P220 Va in on Pins 19~30

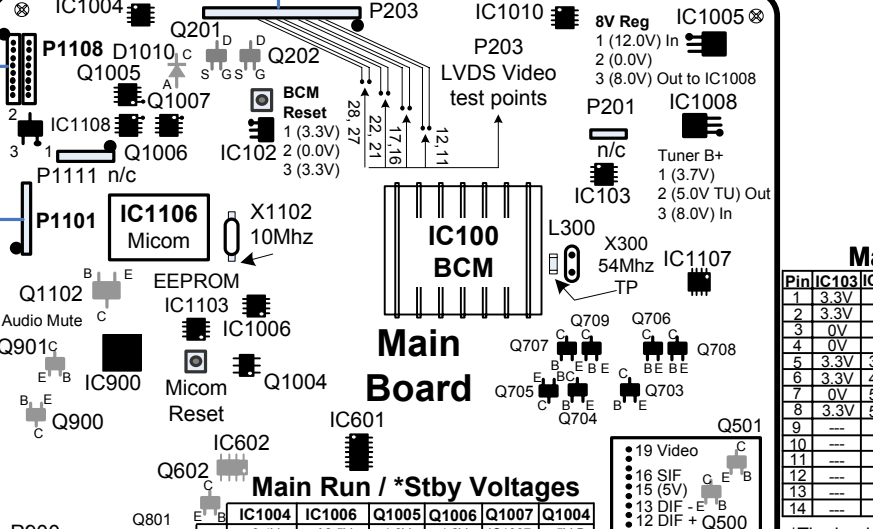
P210 3.3V in on Pins 57~60

P221 Va out on Pins 1~12

P320 Va in on Pins 19~30

P310 3.3V in on Pins 57~60

| Pin | Q201 | Q202 | Pin | Q500 | Q501 | Q602 | Q703 | Q704 | Q705 | Q706 | Q707 | Q708 | Q709 | Q900 | Q901 | Q102 | D801 | D1010 |
|-----|------|------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| G   | 0V   | 0V   | E   | 3.0V | 2.2V | 0V   | 0V   | 0V   | 0V   | 0V   | 0V   | 0V   | 0V   | 0V   | 0V   | 0V   | 3.2V | A-6V  |
| S   | 3.3V | 3.3V | B   | 2.4V | 1.6V | 0V   | 0V   | 0V   | 0V   | 0V   | 0V   | 0V   | 0V   | 0V   | 0.6V | 0V   | 3.0V | C-5V  |
| D   | 3.3V | 3.3V | C   | 0V   | 0V   | 5V   | 0V   | 0V   | 0V   | 0V   | 0V   | 0V   | 0V   | 3.3V | 0V   | 3.3V |      |       |

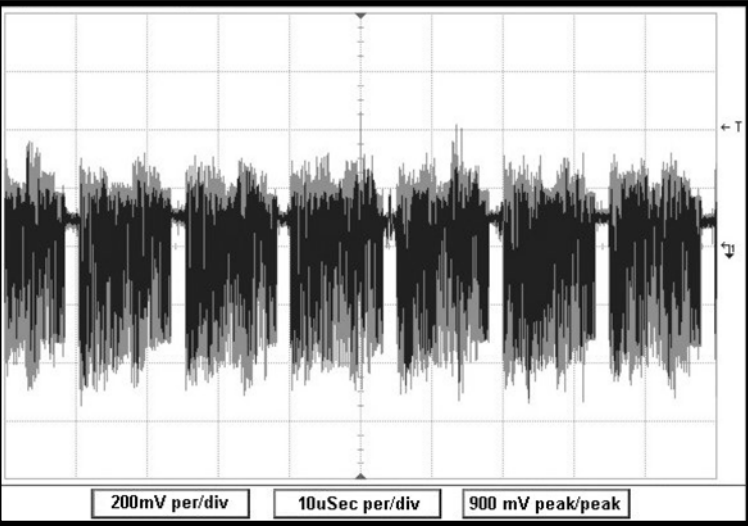


50PS80 LVDS P203 WAVEFORMS

**NOTE: LVDS P203 Information**  
There are actually 20 pins carrying Video plus 4 pins carrying clock signals to the Control board. Only 8 are shown as an example of what signals are on each pin.

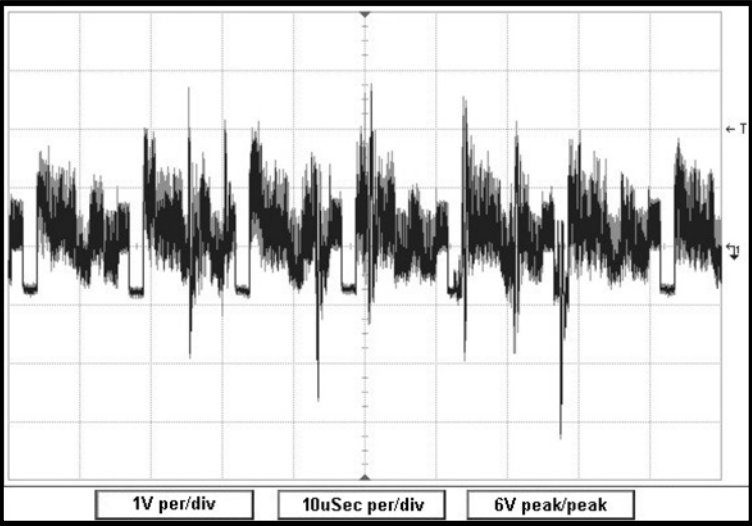
**WAVEFORMS:**  
Waveforms taken using SMTP Color Bar input. All readings give their Time Base related to scope settings. All waveforms taken from the 8 Test Points on the Main PWB.

MAIN PWB VIDEO TEST POINT (28)



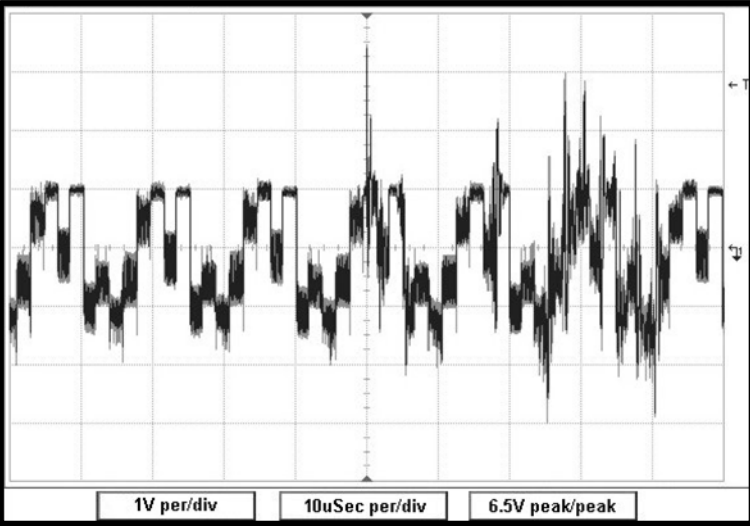
200mV per/div 10uSec per/div 900mV p/p

MAIN PWB VIDEO TEST POINT (27)



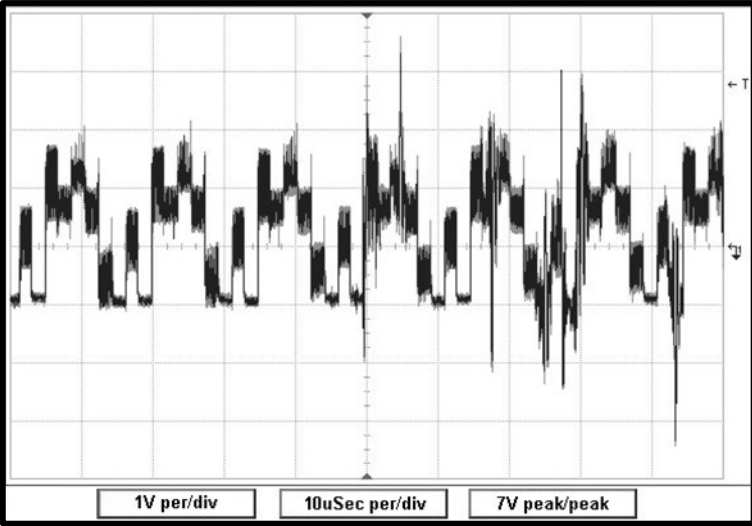
1V per/div 10uSec per/div 6V p/p

MAIN PWB VIDEO TEST POINT (22)



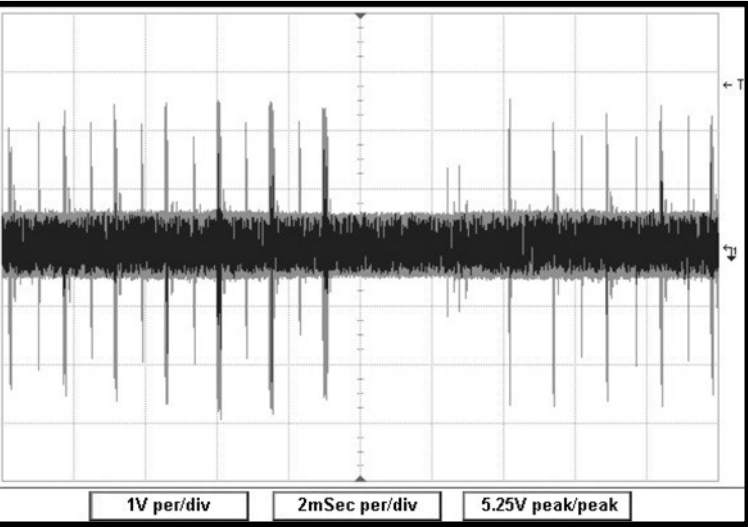
1V per/div 10uSec per/div 6.25V p/p

MAIN PWB VIDEO TEST POINT (21)



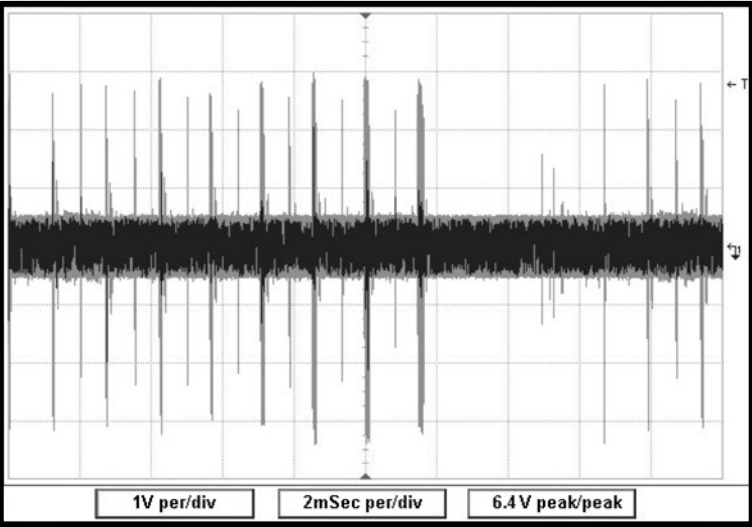
1V per/div 10uSec per/div 7V p/p

MAIN PWB VIDEO TEST POINT (17)



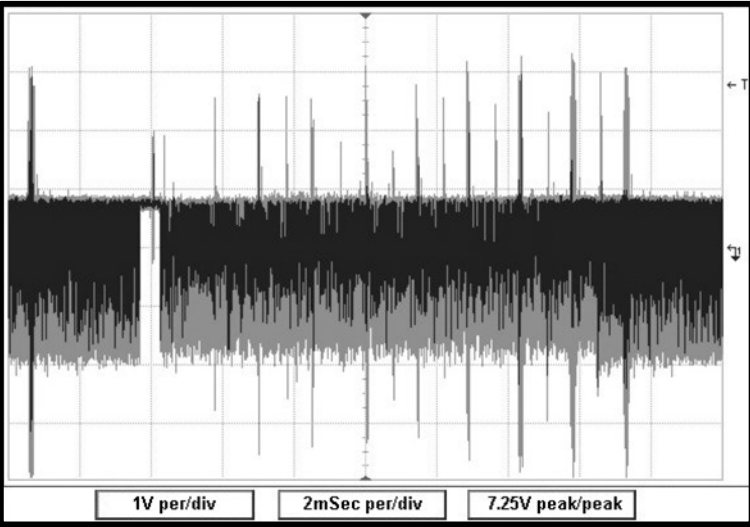
1V per/div 2mSec per/div 5.25V p/p

MAIN PWB VIDEO TEST POINT (16)



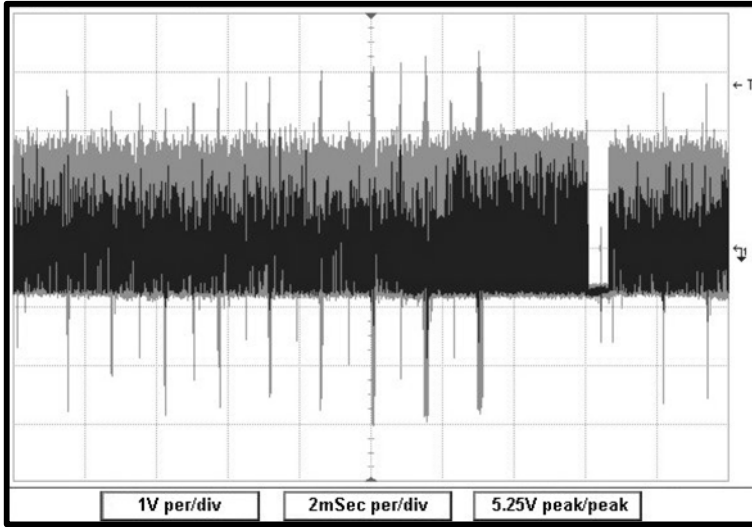
1V per/div 2mSec per/div 6.4V p/p

MAIN PWB VIDEO TEST POINT (12)



1V per/div 2mSec per/div 7.25V p/p

MAIN PWB VIDEO TEST POINT (11)



1V per/div 2mSec per/div 5.25V p/p